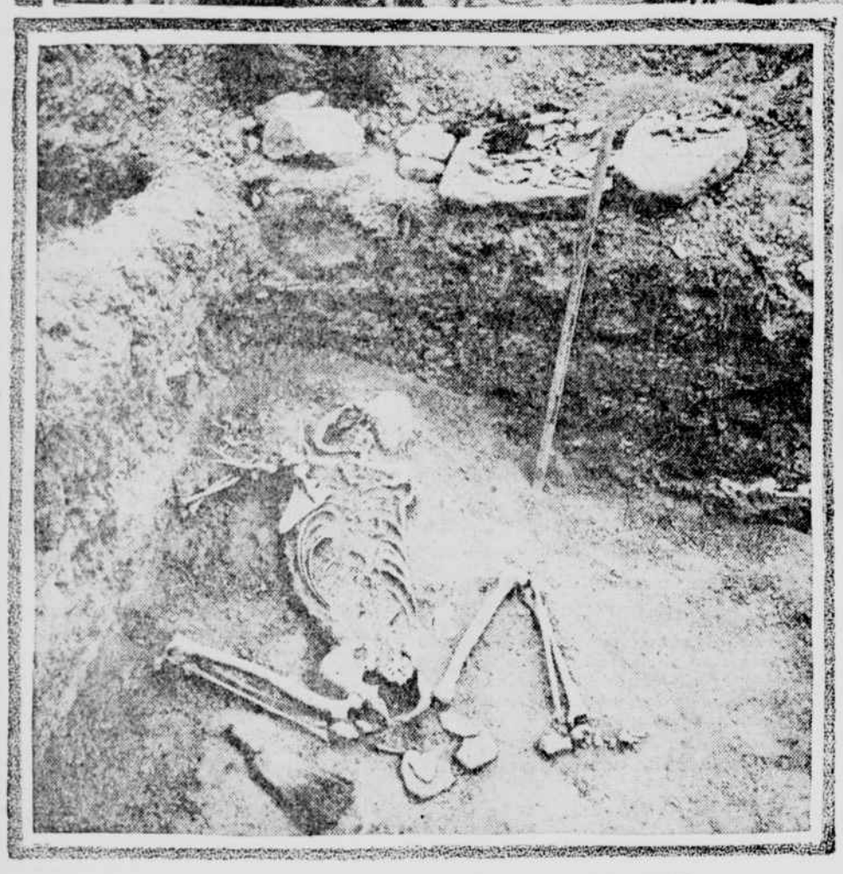
Explorers Made Their Home in the Cliff Cave Of a Vanished People

Cave of a prehistoric period near Cochiti, N. M.

Drawings found on a rock at San Christobal, N. M.



Human skeleton found in a prehistoric chamber at San Pedro, N. M.

LONG before the advent of Cortez and other leaders of the Spanish invasion into Mexico, hundreds of years preceding the march of the conquerors from Spain, a prehistoric race of people existed and evidently flourished in the region of the great Rio Grande, now marked by the ruins of ancient pueblos, occasional shrines and idols carved in stone, somewhat crudely perhaps, but indicating the art of a prehistoric band, traces of which may give light to a past civilization.

It has been estimated recently by archæologists that this ancient civilization dates back at least 1,000 years and possibly 2,000 years.

The origin of this prehistoric people is a mystery which has not been solved, but recent excavations in the Rio Grande area of the southwest, in a section characterized by examples of early glazed pottery, give promise of illuminating the concealed history of a past civilization—days when the pueblos now in ruins flourished in New Mexico and along the Rio Grande.

An expedition under the leadership of Nels C. Nelson, archæologist and explorer, and conducted under the auspices of the American Museum of Natural History, has returned recently from the arid region of the Rio Grande, and extended excavations there during the last five or six months among the ruins of old pueblos have yielded many rare specimens, emblems of an ancient civilization. It is believed that the pottery finds unearthed by the archæologist will prove a key to the development of this early civilization, at present enshrouded in mystery.

CLIFF DWELLERS OF THE TWENTIETH CENTURY.

Within the area where the work of the expedition was conducted by the archæologist no fewer than 150 ruins exist, many of which range in size from 100 to 4,000 rooms. In addition to these ruins the archæologist found many dwelling places hollowed out in the cliff walls, dwelling places which date back possibly 2,000 years. In one of these hollowed dwelling places Mr. and Mrs. Nelson established their headquarters. They became cliff dwellers of the twentieth century while delving into the history of the past.

A picture of the modern cliff dweller's camp is here reproduced with other photographs illustrating this article. The pictures were taken in the field by the archæologist and afford a comprehensive idea of the scope of his work. They show the mesas, which rise to a height over the flat desert country, where the ruins of pueblos bear traces of the early civilization, the bowlders carved with prehistoric pictographs, crude drawings representing various animals—the deer, horse, the thunder bird—and occasionally a human being. The plumed or horned serpent often appears in these ancient pictographs, probably a symbolical design. The coyote, the bear and hunters equipped with shields, bows and arrows are also revealed in these fantastic pictographs.

POTTERY IN THE RUINS OF AN ANCIENT PUEBLO.

While excavating among the ruins of an ancient pueblo, about thirty miles or more southwest of Santa Fé, Mr. Nelson found in a refuse heap layers of different examples of pottery. At the base of this heap he found examples of painted ware. In the layer above different types of glazed ware were disclosed, and in the last layer of this pottery the pieces found corresponded with the period of the Spanish occupation. From about 1680 to the present time—the modern period—no glazed ware existed, only painted examples of the potter's art. Archæologically the old heap of ruins has yielded the most important discovery of the museum's expedition.

It is now possible since Mr. Nelson's discovery of these various types of pottery, some of which are prehistoric, to classify these ancient pueblos in New Mexico into three or four different chronological groups. Thus this old pottery, which dates back 1,000 or 2,000 years, may lead to the unravelling of prehistoric times. It may prove the key to the mysterious prehistoric period. Something may be learned by the archæologists about the migration of these people, and ideas can be formulated as to the direction from which their migration took place, where these ancient people came from. Later investigations will show, it is hoped, the origin of these prehistoric people ultimately.

Prospecting upon the top of a high mesa one day, where the vast country was visible in the clear atmosphere of New Mexico for miles and miles around, Mr. Nelson happened to discover a stone lion, which was lying in the middle of circular ruins of stone structure. It was not far from Cochiti and close to the Rio Grande. The lion was about five feet long and carved out of volcanic tufa, a unique type of early sculpture. Several stone idols were found by the archæologist, one with a melancholy face, in relief, and another at San Lazaro, grotesque in expression.

Ground floor of a house at Pueblo Tungue, N. M.

Mr. Nelson explored the spur of a mesa at Proterc Viejo. Evidently the early dwellers there fortified the place against the attack of the enemy. The mesa itself constituted a natural fortification, and it was difficult to climb it from the region below.

Built into the top of the mesa were the artificial walls, a safeguard planned by the people who once lived on the heights. For ammunition huge bowlders were carried by the mesa dwellers from the creek below to the fortification is found. "This type of primitive ammunition is found," says Mr. Nelson, "in several other mesas of New Mexico."

The ancient dwellers of the region recently explored by the museum's expedition constructed numerous reservoirs to preserve the rain water and to guard against periods of drouth. Twenty of these early reservoirs were found in the region between Pecos and the Rio Grande River south of Santa Fe.

THE CONSERVATION OF THE WATER SUPPLY.

Apparently every one of these ancient pueblos or villages conserved its water supply, judging from evidences existing to-day. At one place there was found the ruin of an old dam some three hundred feet in length. It probably conserved a considerable body of water ages ago, as a supply for the ancient race once living there. Much of the pottery unearthed by the archæologist is fragmentary, and it will prove quite a task to piece some of the fragments together. One example in particular is a rare old Tanos bowl, which dates back hundreds of years, and, notwithstanding the flight of time, this piece is in an excellent state of preservation. It is highly prized by the collector.

Altogether, Mr. Nelson secured more than seven hundred archæological specimens on his expedition to New Mexico for the museum.

Among the objects reclaimed from the ruins of the ancient pueblos were primitive stone axes, stones for polishing and smoothing the floors of early apartment houses, knives, stone hammers, bone flutes, whistles, beads and awls for sewing moccasins and many other crude implements formerly used by the communal dwellers of New Mexico.

Mr. Nelson considers of special importance his collection of ancient pottery, as it reveals an interesting phase of a past civilization, and many of these pieces also represent a lost art—that of pottery glazing. At one time in the remote past this art attained a high degree of perfection. Then it deteriorated, and finally the glazed pieces were replaced by the painted ware. For the last three years the archæologist has been conducting his work of scientific exploration in the desert lands of New Mexico, and has delved deeply into the ruins of pueblos and the shelter places hollowed out in the cliffs of that region. He has succeeded in collecting many interesting and valuable specimens in the region of the Rio Grande area. Last year he returned with more than 2,500 specimens, many being relics of a prehistoric era.

Before engaging in the work of exploration and research for the American Museum Mr. Nelson conducted several expeditions on the Pacific Coast for the University of California. During his recent expedition he took a large number of photographs of the work in the field which illustrate the progress of the excavators. He has also made numerous drawings of the ruined sites, once peopled by a prehistoric race.

AMERICAN HORSES FLOCKING OVER SEA TO FIELDS OF WAR

By O'NEIL SEVIER.

WHEN the business thrown the way of the American people by the great war in Europe is summed up it will be found, perhaps, that at no item of commerce has brought bigger returns than the horse. Agents of the British and French government began combing the country for animals suitable for cavalry, artillery and transport service as far back as the middle of September, and three weeks ago the Italian War Office placed with American contractors a single order for 25,000. Consignments of from 800 to 1,500 have been leaving the ports of New York, Philadelphia, Baltimore, Norfolk, Galveston and New Orleans as often as ships could be obtained for their accommodation since October and thousands have been transported by rail into Canada to be shipped from the ports of Montreal and Halifax.

Officers of the Bureau of Animal Industry at Washington estimated from incomplete returns early in December that shipments to France and England alone had reached the imposing aggregate of from 10,000 to 12,000 head each week, which if maintained for five months would bring the total number of animals shipped out of the country to between 200,000 and 240,000, representing at the not extravagant valuation of $150 a head from $30,000,000 to $36,000,000.

Shipments have not been as frequent from American ports as they would have been if adequate transportation had always been available. The difficulties in the way of obtaining ships had become so great as far back as November 1 that both the British and French governments bought steamers and equipped them as stock ships to ply according to fixed schedules between New York and Norfolk on this side of the Atlantic and Plymouth and Bordeaux on the other. Norfolk has been the most favored of the Atlantic ports since the cold weather set in, about December 1, but New York is not being wholly slighted. On Christmas Day there were 3,500 horses assembled in Jersey City awaiting the return of one of the French boats.

The work of getting these horses together is directed by officers of the transport service of the British and French armies, who make New York their headquarters and buy through American agents familiar with the source of supply. Consignments assembled for shipment are subjected to rigorous examination by veterinaries of the British and French army, who weed out the lame, the halt and the otherwise deficient and send the best on their way, to be classified and assigned each to the arm of the service for which it is best fitted by other officers of the transport services of the two countries at mobilization centres. Fifteen hands one inch is the minimum of height accepted and 900 pounds the minimum of weight. Prices range from $100 to $300, not because the British and French governments want cheap horses, but because the more desirable kind—thoroughbreds and thoroughbred grades for which they would be willing to pay from $400 to $1,000—are not obtainable. The middle West and the Rocky Mountain and Southern states are supplying the bulk of this trade, the most active markets being Chicago, St. Louis, Indianapolis, Memphis, New Orleans, Houston and Galveston.

AS DESTRUCTION INCREASES SO WILL OVERWORK KILL.

Important as this traffic has become its volume is not nearly so great to-day as it will be five or six months hence. The destruction of horses increases in progressive ratio as the war wears on. Overwork kills as inevitably as rifle and shell fire, and the more rapid the destruction by missiles the greater the loss from overwork because the beasts which escape death under fire must toil the harder. It is a physical impossibility now to put more than two horses back in service for every three destroyed, and in a few months more the officers upon whose shoulders rests the burden of keeping up the supply at the front will consider themselves fortunate if they are able to get one for two.

Finally, when the soldiers of France, England, Russia, Belgium, Montenegro and Servia on the one side and those of Germany, Austria and Turkey on the other quit their work of wholesale slaughter and the diplomats of the lately belligerent nations gather at some neutral capital to readjust frontiers and wrangle over indemnities, the call will be even louder and more insistent. For then the military staffs of the armies recently at each others' throats must begin the work of reorganization and preparation for the next war and they will send S. O. S. signals to the four corners of the globe for anything fourfooted to which an iron shoe may be tacked.

Some idea of the requirements of the world-wide military mobilization after a destructive war may be gathered from an inspection of expert estimates of their needs in normal times. General French declared last winter that Great Britain needed then 153,000 horses for effective mobilization, that Canada required 38,000 and India 40,000, and that Australia, which, under the operation of a system of compulsory military training, is fast becoming one of the great war powers of the Pacific, needed 50,000 for the proper equipment of the transport, cavalry and artillery arms of her service.

France was better off. Years ago she took over as a necessary function of state the control of racing, and subordinated it to the single purpose of developing military horses, establishing studs in various parts of the country, giving premiums to farmers for breeding their mares to government stallions of thoroughbred blood, and paying liberal sums for the produce of these mares, according to fitness. The republic needed only about 40,000 horses to bring her artillery, cavalry and transport services into condition for efficient field service.

Germany was 36,000 shy. She had followed the lead of France and her neighbor and ally, Austria-Hungary, in the work of developing, under the direction of her military administration, the desired types, and, in addition to the produce of her own breeding establishments, had been buying remounts in Ireland, Austria, Hungary, England and even in France—thoroughbreds and grades when such were obtainable, animals of cold strains when blooded stock was not obtainable.

The need of the Russian service was the secret of the St. Petersburg War Office. But inasmuch as there were in 1913 35,000,000 horses in Russia and Siberia, some 10,000,000 more than there are in the United States now, and no indications of the activity of Russian agents in foreign countries, it was assumed that the imperial breeding studs of Poland and Lithuania, Southern Russia, Siberia and Turkestan had a sufficient supply.

The only military power of Europe which appeared to have not only enough horses of the desirable sort, but was in a position to sell to neighboring powers, was the Austro-Hungarian Empire.

If the war continues another year or so, as Lord Kitchener and other eminent authorities on both sides predict, the requirements of mobilization in Europe will have trebled before the time comes for reorganization, and the demand for the stock military nations require nowadays will be enormous for another decade or so. It will favorably affect the industry of every country in which the breeding of horses is successfully conducted. There will be no fresh sources of supply. For no country is escaping the general conscription now under way.

The Jockey Club of New York adopted in the winter of 1906-1907 a scheme proposed by Harry K. Knapp to organize in New York without expense to the state a state breeding bureau. Ten thousand dollars a year was voted for the placing and maintaining at stations accessible to the farmers of every part of the state 100 to 150 thoroughbred stallions, graduates of the racetrack which had survived the "winning post test" of endurance and speed. It was the idea of the club that the farmers by breeding their cold blooded mares to these stallions might produce in New York the military type of horse, since costly experimentation in Europe had long ago proven the superiority of the thoroughbred grade for all military purposes.

In fact before the legislation of 1908 drove five or six million dollars' worth of thoroughbreds out of the country they had placed fifty-five stallions in various parts of the state. And if the original plan of the organizers of the bureau had been carried out and from 100 to 150 stallions placed at service there would be in New York to-day from 7,000 to 8,000 military horses of service age, worth, at the conservative valuation of $400 a head, from $2,800,000 to $3,200,000. As it is no more than 2,700 are in existence, and they are in the hands of sportsmen of New England, New York, Pennsylvania and Virginia, who use them for fox hunting. The work has languished since 1908 because of the inability of its promoters to secure stallions to replace losses by death and retirement.

With the prospect of a steady demand for the next twenty-five years for just the stock of the breeding bureau planned to put it in the power of the farmers of New York to breed, the present would seem to be the appropriate time to revive the industry. There are only about thirty stallions in service, but the organization is intact and the Jockey Club stands ready to carry out the original scheme, provided an improvement in the conditions of racing, which alone makes the successful breeding of the thoroughbred possible, stimulates the production of the right sort of stallions. And the work may be extended with profit to the farmers of the breeding states of Pennsylvania, New Jersey, Maryland, Virginia, Kentucky, Tennessee and Missouri, which had planned in 1907 to follow the lead of New York.